

Appl. No. 09/475,190
Amtd. Dated March 10, 2004
Reply to Office action of December 15, 2003
Attorney Docket No. P12414/040020-167
EUS/J/P/04-6050

REMARKS/ARGUMENTS

1.) Amendments

The Applicants have amended Claims 12, 20 and 22; Claim 21 has been cancelled. Accordingly, Claims 1-20 and 22-52 are pending in the application. Favorable reconsideration of the application is respectfully requested in view of the foregoing amendments and the following remarks.

2.) Claim Rejections – 35 U.S.C. § 102

The Examiner rejected Claims 1-4, 6-10, 12-19, 37-41, 43, 44, and 46-52 under 35 U.S.C. 102 (e) as being anticipated by United States Patent No. 6,661,810 issued to Skelly et al (Skelly). Applicants respectfully traverse the Examiner's rejection and further request a favorable reconsideration in view of the following remarks.

The present application discloses and claims a system for regulating or adjusting a frequency deviation of an oscillator in a first node associated with a communication network wherein time stamp messages are interchanged between the nodes of the network to transfer information about absolute time and frequency. Furthermore, the transmitted time stamp messages further include the sending node's estimation of a time interval. The receiving node that receives the time stamp message will then evaluate the sending node's estimation of a time interval to determine the frequency deviation of its oscillator. More particularly, as one embodiment of the present invention, it is assumed that the estimate of the time interval in the received time stamp message is more accurate than the receiving node's own estimate of the time interval, and the frequency deviation of the oscillator is thereby determined by calculating the

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difference between the sending node's estimate of the time interval and the receiving node's estimate of the time interval.

Accordingly, independent Claims 1, 37, and 43 all recite the limitation of a sending node transmitting a reply time stamp message wherein the reply time stamp message includes a time of transmission of the reply time stamp message and the sending node's estimation of a time interval. Using the sending node's estimate of the time interval, in accordance with the teachings of the present invention, the receiving node then determines the frequency deviation and adjusts its oscillator accordingly.

Applicants respectfully submit that no such steps or limitations are anticipated or taught by Skelly. A receiving node in the Skelly invention actually determines the clock offset assuming that there is a constant clock skew between two clocks. In accordance with Skelly, when there is a constant clock skew between two clocks, the clock offset between them gradually increases or decreases over time, depending on the sign of the skew. Therefore, "[t]he actual amount of increase or decrease in the clock offset is proportional to the time duration of observation. The longer you observe, the larger the offset is. The Skelly invention then uses this amount of offset change to estimate the clock skew." (Skelly, Col. 14, 61-67). Accordingly, rather than receiving any "time interval" information from the sender, the receiving node in Skelly monitors the gradual increase or decrease in the clock offset to estimate and determine the clock skew based on the assumption that there is a constant clock skew.

Accordingly, nothing in Skelly discloses or teaches the step of receiving an estimate of time interval from a sending node and using that received estimate of time interval to calculate an estimated frequency deviation in the receiving node as claimed

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in the present invention. For example, the Examiner identified Col. 13, lines 41-49; Col. 1, line 59 to Col. 2, line 3; and Col. 14, lines 9-58 of Skelly as allegedly disclosing all of the limitations of the presently pending independent Claims. Applicants respectfully submit that other than adding a timestamp to a packet when it leaves the sender, Skelly simply fails to disclose or even discuss including any "estimation of a time interval" from the sender to the receiver in that time stamp message. Obviously, since no such sender estimation of a time interval is provided to the receiving node, Skelly similarly fails to disclose or teach the step of using the sender's estimation of time interval to calculate an estimated frequency of deviation in the receiver's oscillator.

Applicants, therefore, respectfully submit that independent Claims 1, 37 and 43 and their depending claims are patentable over the cited references.

3.) Claim Rejections ~ 35 U.S.C. § 103 (a)

The Examiner rejected claims 5, 11, 20-36, 42 and 45 under 35. U.S.C § 103(a) as being unpatentable over Skelly in view of Greer et al (U.S. 5,697,082).

Applicants respectfully submit that Claims 5, 11, 42 and 45 are dependent on now allowable independent Claims 1, 37, or 43 and recite additional limitations thereto. A Notice of Allowance for those claim are respectfully requested.

Regarding independent Claim 20 and its dependent Claims 21-36, Applicants have cancelled dependent Claim 21 and incorporated all of its limitations into its independent Claim 20. As a result, for at least the same reasons as provided above, Applicants respectfully submit that Skelly similarly fails to anticipate or render obvious presently amended Claim 20. Additionally, even though the Greer reference does

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disclose the use of "Kalman filter" in a system for "self-calibrating the time/frequency reference of a communication terminal for use with a satellite or other central communication node." Applicants respectfully submit that Greer also fails to disclose or teach the recited "means for transmitting reply time stamp messages to the other node, the reply time stamp messages containing a time of transmission, a time elapsed since a previous time stamp message was transmitted, and an uncertainty value as to the accuracy of the time elapsed since the previous time stamp message was transmitted."

Respectfully, Applicants submit that now amended independent Claim 20 and its dependent Claims (22-36) are now also patentable over the cited references.

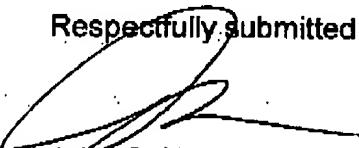
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CONCLUSION

In view of the foregoing remarks, the Applicants believe all of the claims currently pending in the Application to be in a condition for allowance. The Applicant, therefore, respectfully requests that the Examiner withdraw all rejections and issue a Notice of Allowance for Claims 1-20 and 22-52.

The Applicants request a telephonic interview if the Examiner has any questions or requires any additional information that would further or expedite the prosecution of the Application.

Respectfully submitted,



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